AEF-01 – ALTERNATE EMISSION FACTOR REQUEST

State Form 51860 (8-04)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM - Office of Air Quality - Permits Branch
100 N. Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
Http://www.IN.gov/idem/air/permits/index.html

NOTES:

- The purpose of this application is to request to use an alternate emission factor for permitting determinations, estimating source emissions for billing, or for development of emission inventories for use in air quality planning. This is required form.
- Detailed **instructions** for this form are available online at http://www.IN.gov/idem/air/permits/apps/instructions/aef01instructions.html.
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PERMIT NUMBER:

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: 12 PS

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 130 (12PS Heater H-101A, H102, H101B)	N/A	Natural Gas or Refinery Fuel Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

SO_2 and H_2SO_4 Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

NO_x and CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

SO_2 and H_2SO_4 Emissions: BP Whiting has continuous emissions monitors (CEMS) to measure exhaust temperatures and H2S in the fuel gas. As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

NO_x and CO Emissions: Emission factors are based on unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) SO_2 and H_2SO_4 (based on H2S fuel gas CEMS)			
	A. Is the CEM certified by IDEM? Unknown	☐ Yes	☐ No	
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No	
	Source Testing			
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No	
	Identify the trade association or industry group:			
	B. Was testing published and validated through peer review?	☐ Yes	☐ No	
	C. Was testing approved by IDEM?	☐ Yes	☐ No	
	Development of Material Balance Equations			
	Emission Modeling			
	Engineering Estimates:			
x	Other – Please Specify: Vendor Guarantees (NOx and CO)			

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor? ☐ Yes ☒ No

10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM? ☐ Yes ☐ No ☒ NA

11. Modeling Analysis: Was any modeling conducted? ☐ Yes ☒ No ☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: Cooling Towers

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Cooling Towers 2, 3, 4, 7, 8, and HU	Cooling Tower 7 - DE, Cooling Tower 8 - DE, HU Cooling Tower – DE, Cooling Tower 2 - DE, Cooling Tower 3 - DE, and Cooling Tower 4 - DE	Process/Fresh Water

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

PM, PM_{10}, $PM_{2.5}$: Standard AP-42 emission factors are not as accurate and site-specific information.

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

PM, PM_{10}, $PM_{2.5}$: Standard AP-42 emission factors are used; however, BP adjusts these factors based on site-specific dissolved solids data.

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

	Continuous Emissions Monitoring System (CEMS)	
	A. Is the CEM certified by IDEM?	☐ Yes ☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☐ Yes ☐ No
	Source Testing	
	A. Was testing conducted by a trade association or industry group?	☐ Yes ☐ No
	Identify the trade association or industry group:	
	B. Was testing published and validated through peer review?	☐ Yes ☐ No
	C. Was testing approved by IDEM?	☐ Yes ☐ No
	Development of Material Balance Equations	
	Emission Modeling	
	Engineering Estimates:	
x	Other – Please Specify:	Vendor Provided Data (PM, PM10, PM2.5)

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor? ☐ Yes ☒ No

10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM? ☐ Yes ☐ No ☒ NA

11. Modeling Analysis: Was any modeling conducted? ☐ Yes ☒ No ☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: Distillate Hydrotreating Unit

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 720 (DHT Heater B-601A)	N/A	Natural Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

NO_X and CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

NO_x and CO Emissions: Emission factors are based on unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

	Continuous Emissions Monitoring System (CEMS)		
	A. Is the CEM certified by IDEM?	☐ Yes	☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☐ Yes	☐ No
	Source Testing		
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No
	Identify the trade association or industry group:		
	B. Was testing published and validated through peer review?	☐ Yes	☐ No
	C. Was testing approved by IDEM?	☐ Yes	☐ No
	Development of Material Balance Equations		
	Emission Modeling		
	Engineering Estimates:		
x	Other – Please Specify: Vendor Guarantees (NOx and CO)		

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor?		☐ Yes		☒ No
10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM?		☐ Yes	☐ No	☒ NA
11. Modeling Analysis: Was any modeling conducted?		☐ Yes	☒ No	☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: Fluid Catalytic Cracking Unit 600

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 240 (FCU 600)	N/A	Gas oil feed

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

PM, PM_{10}, $PM_{2.5}$, NO_x, SO_2, H_2SO_4, CO, Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

Hg Emissions are based on site specific engineering estimates.

Pb and Be Emissions are based are taken from R. Bertrand and J. Siegell. Emission of Trace Compounds from Catalytic Cracking Regenerators, Environmental Progress (volume 21, No. 3). October 2002. Pages 163-167

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

NO_x, SO_2, CO and Emissions: This unit is equipped with NOx, SO_2, H_2SO_4, and CO continuous emissions monitors (CEMS). As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

PM, PM_{10}, and $PM_{2.5}$ Emissions: The PM, PM_{10}, and $PM_{2.5}$ emission factors are based on stack test performed for BP Whiting Refinery in June 2005.

Hg Emissions are based on site specific engineering estimates.

Pb and Be Emissions are based are taken from R. Bertrand and J. Siegell. Emission of Trace Compounds from Catalytic Cracking Regenerators, Environmental Progress (volume 21, No. 3). October 2002. Pages 163-167

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) NO_x, CO, SO_2 and H_2SO_4 (calculated from SO_2 CEMS)		
	A. Is the CEM certified by IDEM?	☐ Yes	☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No
x	Source Testing PM, PM_{10}, $PM_{2.5}$		
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No
	Identify the trade association or industry group:		
	B. Was testing published and validated through peer review?	☐ Yes	☐ No
	C. Was testing approved by IDEM?	☐ Yes	☐ No
	Development of Material Balance Equations		
	Emission Modeling		
X	Engineering Estimates: Hg		
X	Other – Please Specify: Pb and Be		

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor? ☐ Yes ☒ No

10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM? ☐ Yes ☐ No ☒ NA

11. Modeling Analysis: Was any modeling conducted? ☐ Yes ☒ No ☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: GOHT Unit

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 802 (GOHT Heater F-901A, F901B)	N/A	Natural Gas or Refinery Fuel Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

SO_2 and H_2SO_4 Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

NO_X and CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

SO_2 and H_2SO_4 Emissions: BP Whiting has continuous emissions monitors (CEMS) to measure exhaust temperatures and H_2S in the fuel gas. As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

NO_x and CO Emissions: Emission factors are based on unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) SO_2 and H_2SO_4 (based on H2S fuel gas CEMS)			
	A. Is the CEM certified by IDEM? Unknown	☐ Yes	☐ No	
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No	
	Source Testing			
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No	
	Identify the trade association or industry group:			
	B. Was testing published and validated through peer review?	☐ Yes	☐ No	
	C. Was testing approved by IDEM?	☐ Yes	☐ No	
	Development of Material Balance Equations			
	Emission Modeling			
	Engineering Estimates:			
x	Other – Please Specify: Vendor Guarantees (NO_x and CO)			

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor?		☐ Yes	☒ No	
10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM?		☐ Yes	☐ No	☒ NA
11. Modeling Analysis: Was any modeling conducted?		☐ Yes	☒ No	☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: Isomerization Unit

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 210 (ISOM Heater H-1)	N/A	Natural Gas or Refinery Fuel Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

SO_2 and H_2SO_4 Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

SO_2 and H_2SO_4 Emissions: BP Whiting has continuous emissions monitors (CEMS) to measure exhaust temperatures and H2S in the fuel gas. As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) SO_2 and H_2SO_4 (based on H2S fuel gas CEMS)		
	A. Is the CEM certified by IDEM? Unknown	☐ Yes	☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No
	Source Testing		
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No
	Identify the trade association or industry group:		
	B. Was testing published and validated through peer review?	☐ Yes	☐ No
	C. Was testing approved by IDEM?	☐ Yes	☐ No
	Development of Material Balance Equations		
	Emission Modeling		
	Engineering Estimates:		
	Other – Please Specify:		

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor?		☐ Yes	☒ No	
10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM?	☐ Yes	☐ No	☒ NA	
11. Modeling Analysis: Was any modeling conducted?	☐ Yes	☒ No	☐ NA	

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: #2 Coker

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 800 (#2 Coker Heaters H-201, H-202, and H-203)	H-201 SCR, H-202 SCR, and H-203 SCR	Natural Gas or Refinery Fuel Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

SO_2 and H_2SO_4 Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

NO_x and CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

SO_2 and H_2SO_4 Emissions: BP Whiting has emissions monitors (CEMS) to measure exhaust temperatures and H2S in the fuel gas. As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

NO_x and CO Emissions: Emission factors are based on unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) SO_2 and H_2SO_4 (based on H2S fuel gas CEMS)		
	A. Is the CEM certified by IDEM? Unknown	☐ Yes	☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No
	Source Testing		
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No
	Identify the trade association or industry group:		
	B. Was testing published and validated through peer review?	☐ Yes	☐ No
	C. Was testing approved by IDEM?	☐ Yes	☐ No
	Development of Material Balance Equations		
	Emission Modeling		
	Engineering Estimates:		
x	Other – Please Specify: Vendor Guarantees (NOx and CO)		

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor?		☐ Yes		☒ No
10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM?		☐ Yes	☐ No	☒ NA
11. Modeling Analysis: Was any modeling conducted?		☐ Yes	☒ No	☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A

AEF-01 – ALTERNATE EMISSION FACTOR REQUEST

State Form 51860 (8-04)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM - Office of Air Quality - Permits Branch
100 N. Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
Http://www.IN.gov/idem/air/permits/index.html

NOTES:

- The purpose of this application is to request to use an alternate emission factor for permitting determinations, estimating source emissions for billing, or for development of emission inventories for use in air quality planning. This is required form.
- Detailed **instructions** for this form are available online at http://www.IN.gov/idem/air/permits/apps/instructions/aef01instructions.html.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

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PERMIT NUMBER:

___ _____ – _____ – _____

PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: New Hydrogen Plant (3rd Party SMR)

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 801 (Heaters HU-1 and HU-2)	HU-1 SCR and HU-2 SCR	Natural Gas and PSA Off Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

NO_x and CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

NO_x and CO Emissions: Emission factors are based on unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

	Continuous Emissions Monitoring System (CEMS)		
	A. Is the CEM certified by IDEM?	☐ Yes	☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☐ Yes	☐ No
	Source Testing		
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No
	Identify the trade association or industry group:		
	B. Was testing published and validated through peer review?	☐ Yes	☐ No
	C. Was testing approved by IDEM?	☐ Yes	☐ No
	Development of Material Balance Equations		
	Emission Modeling		
	Engineering Estimates:		
x	Other – Please Specify: Vendor Guarantees (NOx and CO)		

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor?		☐ Yes	☒ No	
10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM?		☐ Yes	☐ No	☒ NA
11. Modeling Analysis: Was any modeling conducted?		☐ Yes	☒ No	☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: No. 11 Pipe Still Heater H-200

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
Unit 120 (11 PS Heater H-200)	N/A	Natural Gas or Refinery Fuel Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

SO_2 and H_2SO_4 Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

NO_x and CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

SO_2 and H_2SO_4 Emissions: BP Whiting has continuous emissions monitors (CEMS) to measure exhaust temperatures and H_2S in the fuel gas. As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

NO_x and CO Emissions: Emission factors are based on unit-specific vendor guarantees.

Hg Emissions: API / WSPA Emission Factors for Boilers / Heaters using Process Gas, 1998 (Table ES-1).

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) SO_2 and H_2SO_4 (based on H2S fuel gas CEMS)			
	A. Is the CEM certified by IDEM? Unknown	☐ Yes	☐ No	
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No	
	Source Testing			
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No	
	Identify the trade association or industry group:			
	B. Was testing published and validated through peer review?	☐ Yes	☐ No	
	C. Was testing approved by IDEM?	☐ Yes	☐ No	
	Development of Material Balance Equations			
	Emission Modeling			
	Engineering Estimates:			
x	Other – Please Specify: Vendor Guarantees (NOx and CO)			

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor? ☐ Yes ☒ No

10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM? ☐ Yes ☐ No ☒ NA

11. Modeling Analysis: Was any modeling conducted? ☐ Yes ☒ No ☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

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PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: Sulfur Recovery Unit

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
SRU Claus Trains, COT-1, COT-2	N/A	Process Gas

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42 Emission Factors

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

Process SO_2 and H_2SO_4 Emissions: Standard AP-42 emission factors are not as accurate as site-specific data.

Combustion and Process CO Emissions: Standard AP-42 emission factors are not as accurate as unit-specific vendor guarantees.

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. Proposed AEF: Briefly describe the proposed alternate emission factor.

Process SO_2 and H_2SO_4: BP Whiting's SRU will be equipped with SO_2 continuous emissions monitors (CEMS). As such, emissions calculations are based on site-specific data rather than standard AP-42 emission factors for more accurate emissions documentation.

Combustion CO Emissions: Emission factor based on unit-specific vendor guarantee.

Process CO Emissions: Based on unit-specific anticipated performance.

8. AEF Development Method: What approach was, or will be used to develop the alternate emission factor?

x	Continuous Emissions Monitoring System (CEMS) SO_2		
	A. Is the CEM certified by IDEM? Uknown	☐ Yes	☐ No
	B. Is the CEM operated and maintained in accordance with the applicable regulations?	☒ Yes	☐ No
	Source Testing		
	A. Was testing conducted by a trade association or industry group?	☐ Yes	☐ No
	Identify the trade association or industry group:		
	B. Was testing published and validated through peer review?	☐ Yes	☐ No
	C. Was testing approved by IDEM?	☐ Yes	☐ No
	Development of Material Balance Equations		
	Emission Modeling		
	Engineering Estimates:		
	Other – Please Specify:		

9. Supporting Data: Have you attached the data supporting the development of your alternate emission factor? ☐ Yes ☒ No

10. RM/TP Submittal: Have you submitted the appropriate reference method or test protocol to IDEM? ☐ Yes ☐ No ☒ NA

11. Modeling Analysis: Was any modeling conducted? ☐ Yes ☒ No ☐ NA

12. Modeling Summary: Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

N/A